# Lab No. 1: Configuring LANs in Packet Tracer

## Exercise 1:

Draw up a diagram including 02 stations and a switch.

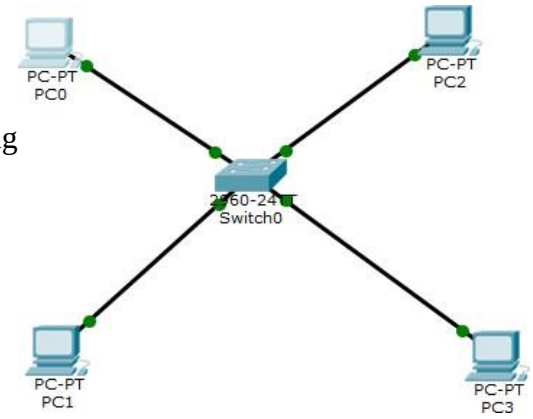
**@ IP PC_1 ;192.168.1.1/24**

**@ IP PC_2 : 192.168.1.2/24**

## Exercise 2:

1. Run Packet Tracer and complete Assembly 1(a).
2. Configure the IP addresses and subnet masks of the machines.
3. Open a terminal and check the IP addresses of the machines using the `ipconfig` command.
4. Create the following addressing plan:

| Host | IP address | Subnet mask |
|---|---|---|
| pc0 | 192.168.0.2 | 255.255.255.0 |
| pc1 | 192.168.0.5 | 255.255.255.0 |
| pc2 | 192.168.0.9 | 255.255.255.0 |
| pc3 | 192.168.1.2 | 255.255.255.0 |

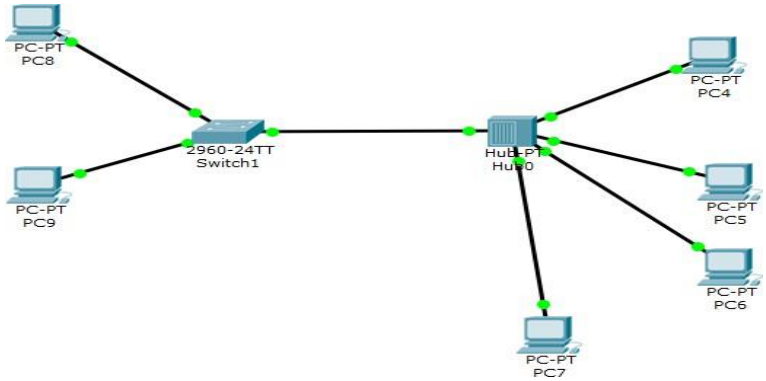



**Assembly 1 (a)**

5. Why is communication with PC3 impossible?
6. Propose and test the use of different "IP addresses/Subnet Mask" to enable communication between PC3 and the other workstations.
7. Give the condition for which there is communication between the 2 stations.
8. Propose and test the use of other "addresses/Subnet mask" to enable communication between PC3 and the other stations.
9. Give the condition for which there is communication between the 2 stations.

## Exercise 3:

Create the following network:



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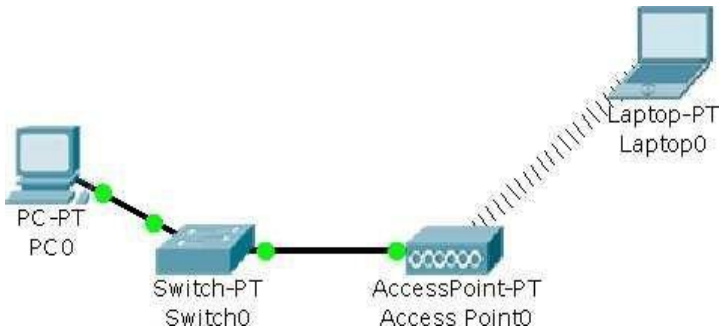
1. Configure the stations so that they all have IP addresses contained in the network. **192.168.3.0** (mask : **255.255.255.0**)?
2. Use simulation mode to visualize the path of information between PC9 and PC4?
3. What is the main difference between a hub and a switch?

Check the connection between the 05 stations.

**Exercise 4:**




1. Configure the 2 stations and the wireless access point.

**Configuration IP:**

@ IP PC0 : 10.1.1.1/8

@ IP Laptop0 : 10.2.2.2/8

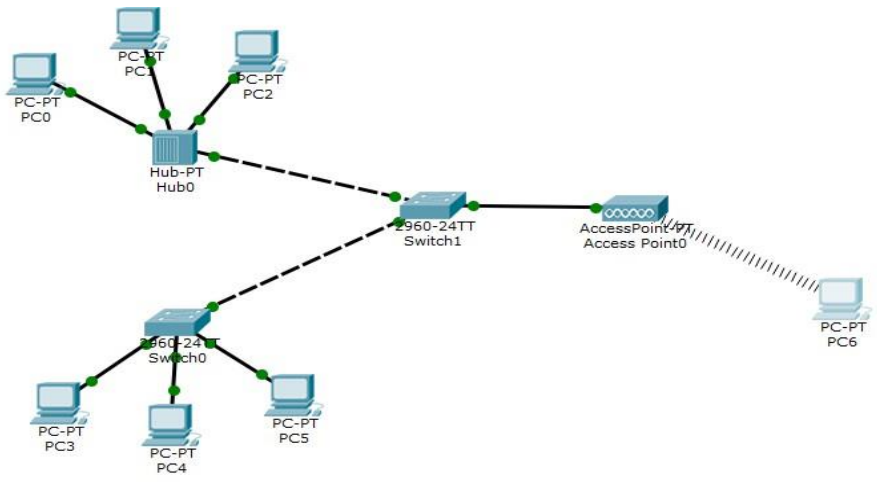
**Wifi Configuration:**

**SSID** :PacketWifi

**Encryption Type** : WEP

**WEP Key** :ABCDEABCDE

2. Test the communication between the 2 stations.
3. Create the following network :




4. Configure devices on the 192.168.0.0 network with the 255.255.255.0 subnet mask.

4. Send a Ping request (or any other PDU) from the PC6 station to the PC0 station.
5. Test connectivity between different devices on the network.

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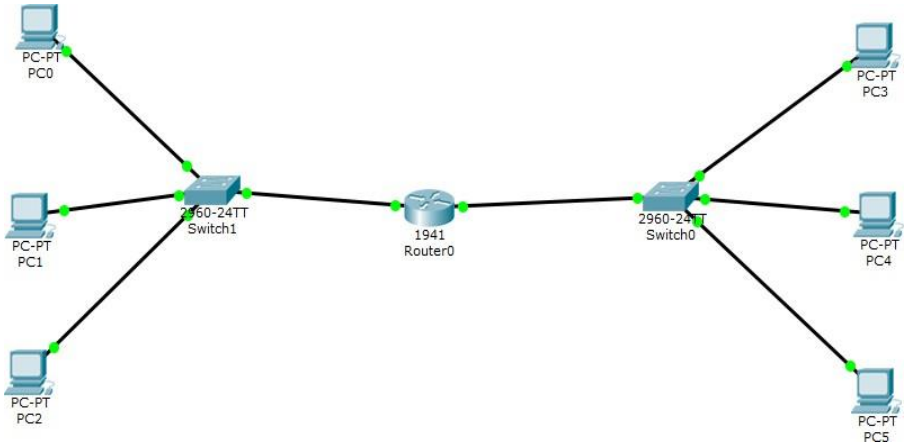
## Exercise 5:

Create the following network.




1. Which cable should you choose between a router and a switch.

**a.** Configure the devices connected to switch0 (except the router) on the 192.168.0.0 network with mask of 255.255.255.0.

**b.** Configure the devices connected to Switch1 (except the router) on the 10.0.0.0 network with mask of 255.0.0.0

**c.** Configure the router interface connected to Switch1 on the 10.0.0.0 network with the IP address 10.0.0.1 and subnet mask 255.0.0.0. Configure the interface connected to Switch0 on the 192.168.0.0 network with the IP address 192.168.0.1 and subnet mask 255.255.255.0.

Don't forget to activate each interface (check "On" in "Port Status").

**d.** Test the connectivity of each network separately using a ping request.

**e.** Test the connectivity between a device on the 10.0.0.0 network and a device on the 192.168.0.0 network. Comment and explain why a Ping request does not succeed.

**f.** At this stage of the configuration, who can communicate with whom? (You can ping between the different devices to verify your answer). Do you have an explanation?

**g.** Recall the role of a gateway for a station.

**h.** Add a default gateway for each device in the 10.0.0.0 network, equal to the IP address of the router's interface on this network (Gateway).

Redo the test from **e** question. Comment on the result.

**i.** Now, add a default gateway on each station in the 192.168.0.0 network, equal to the IP address of the router's interface on this network, and redo the test from question **e**.

Comment on the result.